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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Limerick Generating Station, Units 1 and 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Subject: Response to Request for Additional Information Concerning a Proposed Alternative Associated with the Risk-Informed Inservice Inspection Program

References:
1) Letter from M.P. Gallagher (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, March 15, 2002
2) Letter from S. P. Wall (U. S. Nuclear Regulatory Commission) to J. L. Skolds (Exelon Generation Company, LLC), dated September 10, 2002

Dear Sir/Madam:

In the Reference 1 letter, Exelon Generation Company (Exelon), LLC submitted a proposed alternative (RR-32) to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," requirements for the selection and examination of Class 1 and 2 piping welds. The alternative proposed by Limerick Generating Station (LGS), Units 1 and 2 uses methodology for a Risk-Informed Inservice Inspection (RISI) program approved by the U. S. Nuclear Regulatory Commission (NRC).

In the Reference 2 letter, the U. S. Nuclear Regulatory Commission requested additional information. Attached is our response to these questions.

If you have any questions, please contact us.

Very truly yours,

Michael P. Gallagher

Michael P. Gallagher
Director, Licensing & Regulatory Affairs
Mid-Atlantic Regional Operating Group

Attachment 1 - Response to Request for Additional Information

cc: H. J. Miller, Administrator, Region I, USNRC
A. L. Burritt, USNRC Senior Resident Inspector, LGS
S. P. Wall, Project Manager, USNRC

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Limerick Generating Station
Units 1 and 2

Response to Request for Additional Information
Concerning a
Proposed Alternative Associated with the
Risk-Informed Inservice Inspection Program

ATTACHMENT 1

Reference: 1) Letter from M. P. Gallagher (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, March 15, 2002

QUESTION 1:

In the original individual plant examination model, the interface system loss-of-coolant accident events were screened out. Does the second upgraded probabilistic risk assessment model used to support the submittal make the same assumption? If so, please address the appropriateness of this assumption and its impact on the consequence analysis results.

Response:

The Limerick PRA model used to support the submittal makes the same assumption. This assumption does not affect the consequence analysis results because each element in the analysis was addressed specifically for its consequence to the plant in the probabilistic risk assessment (PRA) model. The elements evaluated are more than those typically included in a PRA Interfacing System Loss-of-Coolant-Accident (ISLOCA) analysis. Each element is evaluated for both the loss of the associated train or system and the potential loss of co-located equipment such as a second pump in the same room due to flooding. This is essentially equivalent to the consequences of an ISLOCA on that piping element.

An ISLOCA has its greatest impact on Larger Early Release Frequency (LERF) due to the direct release pathway out of Primary Containment. ISLOCA candidate piping is typically low pressure ECCS piping. Each Limerick Generating Station unit has 6 independent trains of low pressure ECCS so if one train is presumed to be lost as an ISLOCA initiator and one train failed as the ISI element, there are multiple trains remaining for mitigation. This would keep the impact on LERF low and therefore not affect the consequences analysis. Many of the ISI elements would have no effect on an ISLOCA Core Damage Frequency (CDF) calculation as their failure does not affect available mitigation for an ISLOCA.

QUESTION 2:

On page 4 of Enclosure 2 of your letter dated March 15, 2002, it is stated that in the presence of another damage mechanism in addition to flow accelerated corrosion (FAC), the element was retained in the program for inspection of FAC and also inspected for the other damage mechanism as part of the Risk-Informed Inservice Inspection (RI-ISI) Program. Please clarify how the number and location of inspections were determined for elements exposed to FAC and some other degradation mechanism.

Response:

During the selection process, an attempt is made to ensure that all damage mechanisms and all combinations of damage mechanisms are represented in the elements selected for inspection. Elements susceptible to FAC along with another degradation mechanism (e.g., thermal fatigue) are retained as part of the RISI scope and are included in the element selection for the purpose of performing exams to detect the additional degradation mechanism. After the

Risk Category was determined for each element (see Figure 1 of Enclosure 2, Reference 1) and the population of elements subject to selection was defined, the 25% (High Risk) or 10% (Medium Risk) selection criteria was applied. To determine which elements should be inspected, several factors were taken into consideration, such as coverage limitations, weld type, past recordable indications, radiation level, scaffolding, etc. The final selections were reviewed by qualified site representatives and project team members to obtain a consensus on the risk-informed inspection scope and element selections.

QUESTION 3:

Under what conditions would the LGS RI-ISI program be resubmitted to the NRC before the end of any 10-year interval?

Response:

In Section 4.0, "Implementation and Monitoring Program," of the Reference 1 letter, we stated that, as a minimum, the risk ranking of piping element selections will be reviewed and adjusted on an ASME ISI "Interval" basis. Based on further review of other Exelon responses to this concern, the risk ranking of piping segments will be reviewed and adjusted on an ASME ISI "Period" basis. This review will be documented internally, and the results need not be submitted to the NRC on the "Period" frequency. We also understand that the RI-ISI program is a living program and its implementation will require feedback of new, relevant information to ensure the appropriate identification of safety significant piping locations. More frequent adjustment of the piping segment risk ranking may also be required as directed by future NRC bulletin or generic letter requirements, or by industry and plant-specific feedback.

QUESTION 4:

Will the LGS RI-ISI program be updated every 10 years and submitted to the NRC consistent with the current American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI, requirements?

Response:

The RI-ISI program will be updated at the end of the 10-year ISI interval. This submittal may again take the form of a relief request to implement an updated RI-ISI program depending on future regulatory requirements. The RI-ISI program may be submitted to the NRC prior to the end of the 10-year ISI interval if there is a deviation from the RI-ISI methodology described in the initial 10-year interval ISI submittal to the NRC for that interval; or, if industry experience determines that there is a need for significant revision to the program as described in the initial 10-year interval ISI submittal to the NRC for that interval.